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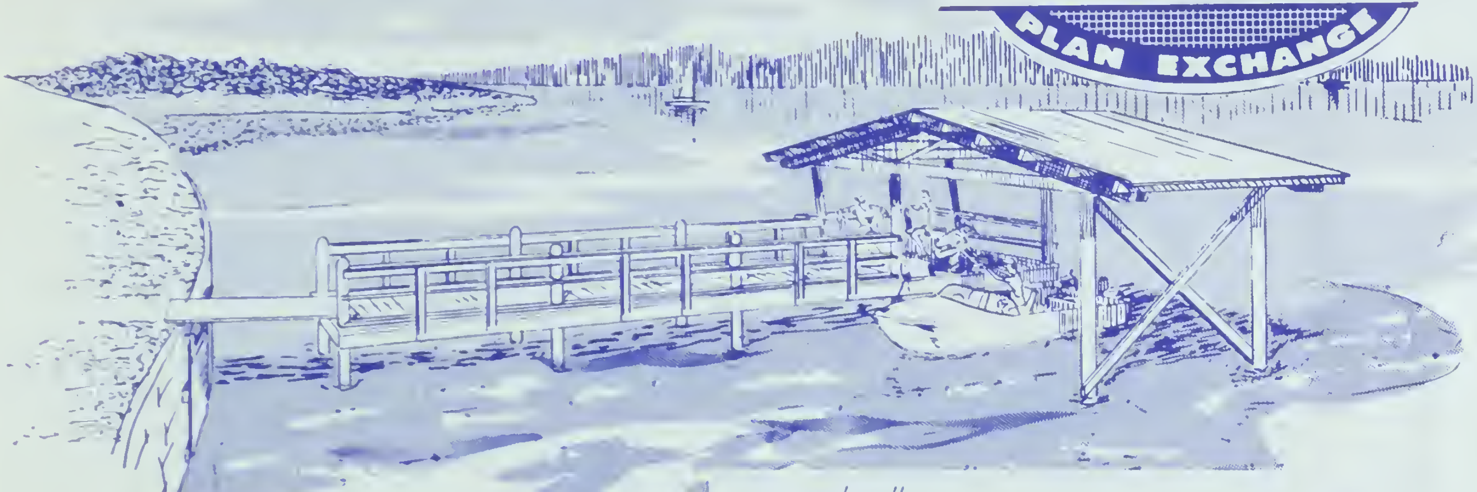
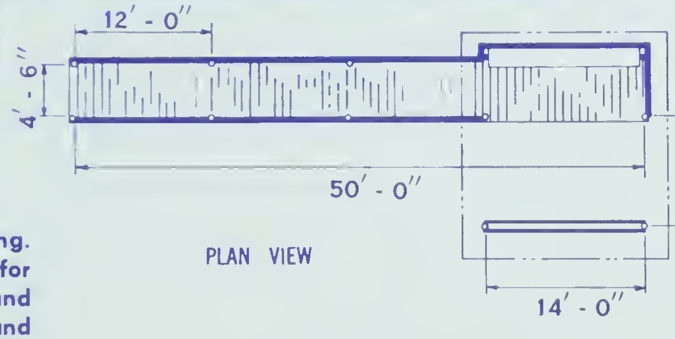
BOAT LANDING

COOPERATIVE FARM BUILDING
Plan No. 5975
(2 - SHEETS)
PLAN EXCHANGE





Summer is a good time to build a boat landing. This all-weather dock for a small boat is designed for use in a sound where waves do not exceed 3 feet and the tide is normally 2 to 3 feet. It is built to withstand winds of hurricane force. But it is not suitable for a river or lake where massive ice floes can cause structural damage.

Any location on an open stretch of water is subjected to higher winds than an inland site. Therefore, build this shelter extra strong to resist wind forces. Fasten the roof down well. Drive at least four deformed-shank, 9-gage (diameter, 0.144 inch), galvanized roofing nails 2 inches long into each sheet at each purlin (the 2- by 8-inch members that support the roof lengthwise). At least 4 pounds of nails this size are required to anchor the roof. Spike the purlins securely to 2- by 8-inch purlin ties and, in turn, spike the purlin ties to both 2- by 8-inch rafters. Bolt the rafters to the pilings. The building can still fail if the pilings are not well anchored in the bottom.

In most areas the pilings can be set without special equipment. A water jet will penetrate ordinary clays. Pressure and volume of water required for jetting a hole for a piling vary with the depth of water head above the jet and with the density and tightness of the clay. An ordinary garden hose equipped with a nozzle and fed from a domestic water system (shallow well pump driven with a ½-horsepower electrical motor) has been used successfully for setting piling.

The technique consists of jetting a pilot hole about 3 or 4 inches in diameter. This is done by fastening the garden hose and nozzle to a steel bar (crowbar) about 6 feet long and approximately 1 inch square. The end of the bar should be chisel- or diamond-pointed and tempered to hold the point. Fasten the nozzle of the hose 2 inches above the point, to deliver a jet stream to the point. Drive a hole in the bottom by plunging the steel bar and hose up and down. Do not be disturbed if the pilot hole fills with sand when you remove the jet; the hole serves as a soft spot to guide the piling in a vertical position. Insert a pointed piling in the top of the pilot hole; with the garden hose either on a stick or on the steel bar, continue jetting beneath the pile by plunging the jet nozzle down and up.

Moving the jet up and down produces a drawing action on the pile; the pile may also be slightly lifted and dropped to increase the movement of slush to the soil material under the pile.

Set the pile at least 5 feet deep to give good bottom anchorage to the boathouse. Piles for the wharf may

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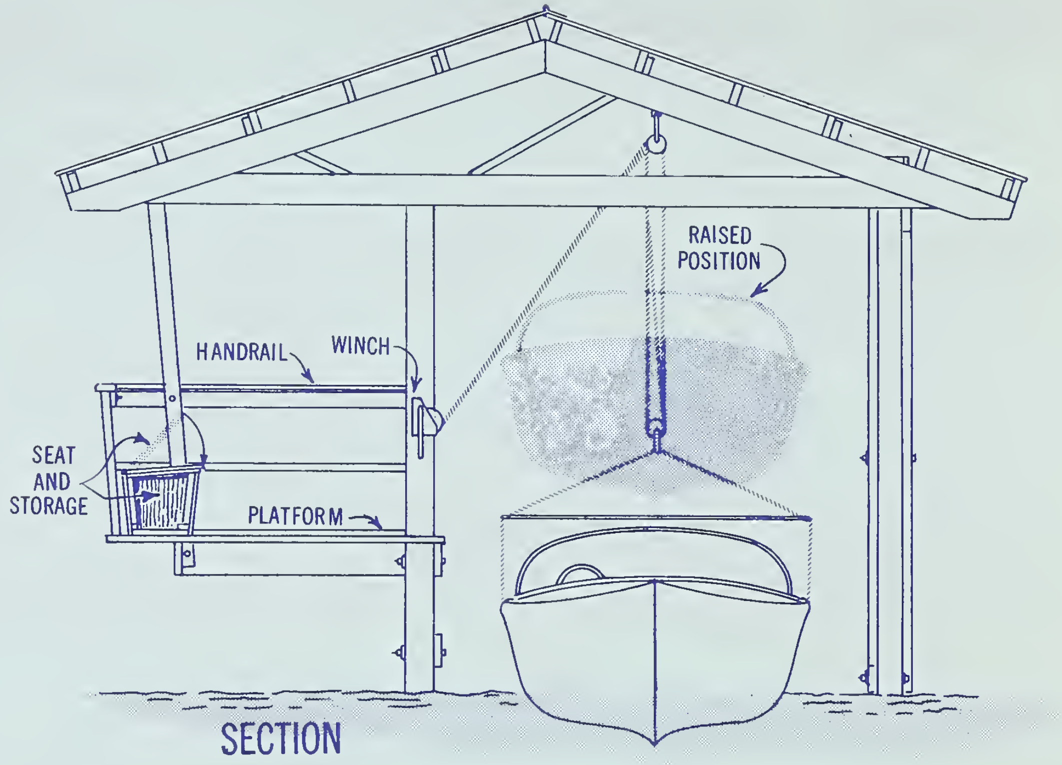

be set shallower—3 to 4 feet. The greatest force in the wharf comes from driving waves. A wharf fairly close to the water is more convenient than a high wharf, but waves knock decking from low wharves unless the boards have anchorage that is better than that provided by nails through the deck into the stringers.

This design shows a 2 x 4 toe guard along the outside of the wharf on top of the deck. This guard has an eyebolt (5/16 inch in diameter by 8 inches long) through the toe guard and the deck. The eye of the bolt lies beside the 2- by 8-inch stringer. A bolt 5/16 inch in diameter with large washers ties the eyebolt to the stringer; the stringer is securely bolted to the piling with a bolt ½ inch in diameter. Respect for the uplift forces of wind and water results in sound construction.

Consider changes in water level when you build a boat landing. The gangplank connecting the wharf to the shoreline should never be rigidly fastened, because free-moving piles that can adjust their positions to resist water and wind are one secret of piling strength. The gangplank can be rigidly fastened on the shore and rest freely on the wharf.

Turbulent water requires removal of the boat from the water when it is left in the landing shed unattended. A steel cable (1/8 inch to 3/16 inch in diameter) attached to winches on the piles at each end of the boathouse can be attached to a block hung from the rafters. If the cable passing through the block is strung between the lower rafter ties on the pathway to the fall, the wind and waves cannot swing the boat enough for it to strike the piles. Fore and aft slings made of webbing can be looped under the boat. Spreader sticks made from 2- by 3-inch clear lumber may be placed in the slings above the gunwales to prevent the slings from pulling the gunwales inward. Spreader sticks will not be needed on well-built boats. The fore sling can be dropped over the bow, but the aft sling may have to be placed beneath the boat in front of the propeller if an outboard motor is used. If the sling has to go beneath instead of looping over the stern, the task can be made easier by installing a quick-acting snap in the sling and by stiffening the sling with a piece of material cut from an old automobile tire. The stiffened sling can be more easily inserted beneath the boat.

A locker and seat installed on the landing dock may be used to keep oars, gasoline, skis, fishing tackle, life preservers, and similar equipment needed for your safe enjoyment of the water.

Complete working drawings may be obtained through your county agricultural agent or from the Extension agricultural engineer at most State agricultural colleges. There is usually a small charge.

ORDER PLAN NO. 5975, BOAT LANDING

If the working drawings are not available in your State, write to the U.S. Department of Agriculture, Agricultural Engineering Research Division, Plant Industry Station, Beltsville, Md. The U.S. Department of Agriculture does not distribute drawings, but will direct your request to a State that does distribute them.

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